Pronghorn Management Guide

2006

PRONGHORN MANAGEMENT: 2006

Biological and management principles and practices designed to sustain pronghorn populations from Canada to Mexico

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May 2006

Published by:
21st Pronghorn Workshop and North Dakota Game and Fish Department
Bismarck, North Dakota

ACKNOWLEDGEMENTS

In addition to the compilers, material contributions from the following individuals made this publication possible:

Jeff Ablegglen, Amber Alexander, Steve Amstrup, Elaine Anthonise, Bob Autenrieth, Morley Barrett, Don Beale, Elaine J. Brown, Ramón Castellanos, Laura Colton, Buck Compton, Charles Eustace, Edson Fichter, Terry Funk, Bill Glasgow, Harry Harju, Jack Herring, Robb Hitchcock, Fred Lindzey, David Lockman, Eric Loft, Daryl Lutz, Bob McCarty, Jim McKenzie, Karl Menzel, Bruce Morrison, Duane Pyrah, Phil Riddle, Felipe Ramírez, Victor Sánchez, Sam Scott, Bob Sherwood, David Simpson, Myrna Smith, Robert Streeter, Ed Struzik, Elroy Taylor, Ted Terrell, George Tsukamoto, Lee Upham, Bob Watts, Margaret Wild, Mitch Willis, Roger Wilson, Charles Winkler, Walt Van Dyke, and Scott Zalaznik. Layout design by Elaine I. Anthonise

About the Biennial Pronghorn Workshop

The Pronghorn Workshop began in 1965 as the Antelope States Workshop and currently meets every even year. Attendees represent western state and provincial wildlife agencies, federal land and wildlife agencies, universities and colleges, wildlife consultants, and private conservationists from Canada, Mexico, and the United States. The Workshop's goals are to exchange information and encourage the perpetuation of sustainable wild herds of pronghorn on western rangelands.

Meetings are held in different locations to present technical and scientific data and conduct field trips. This information is assembled into proceedings, which provide "state of the art" knowledge on pronghorn and pronghorn habitat. In addition, the workshop periodically publishes “Pronghorn Management Guides”, providing a compendium of suggested practices and techniques for managing pronghorn and pronghorn habitat.

These guidelines should be cited as: R.E. Autenrieth, D.E. Brown, J. Cancino, R.M. Lee, R.A. Ockenfels, B.W. O’Gara, T.M. Pojar and J.D. Yoakum. eds. Pronghorn Management Guides: 2006. Fourth Edition. Pronghorn Workshop and North Dakota Game and Fish Department, Bismarck, North Dakota. 158 pp.

Limited copies are available on a “first come” basis from: North Dakota Game and Fish Department, 100 North Bismarck Expressway, Bismarck, North Dakota 58501-5095, USA.

Copies translated into Spanish are available from: Dr. Jorge Cancino, Centro de Investigaciones Biologicas del Noreste, Apdo. Postal 128, La Paz, 23000, Baja California Sur, Mexico

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PREFACE

Participants at the 1976 Pronghorn Antelope Workshop identified a number of problems affecting the welfare of pronghorn (*Antilocapra americana)*. As a response, several committees were formed to prepare guidelines to identify debilitating factors and suggest management procedures and techniques to rectify these problems and benefit pronghorn. These recommendations were compiled into the *Guidelines for the Management of Pronghorn Antelope* (Autenrieth 1978) and published as part of the Proceedings of the 8th Pronghorn Antelope Workshop. The objective of this publication was to provide resource managers with the best information available for managing and perpetuating pronghorn and their habitats. Although these initial guidelines incorporated many of the suggested management methods identified and developed by Griffith (1962) for the Interstate Antelope Conference, the intent was to make the Guidelines applicable to pronghorn rangelands from Canada to Mexico. The need to periodically revise and incorporate new information was recognized at the outset.

The first supplement to the Guidelines, *Trapping and Translocation* (McKenzie 1984), was printed and distributed by the Texas Parks and Wildlife Department, and published as part of the Proceedings of the 11th Pronghorn Antelope Workshop.

At the 13th Pronghorn Antelope Workshop in Oregon (1988), participants urged that the above section on trapping and translocation techniques be expanded with a special emphasis on how to evaluate suitable sites for translocations. O'Gara and Yoakum (1990) responded to this request with *Additional Capture Methods and Habitat Suitability Criteria for Pronghorn Translocations*, published in the Proceedings of the 14th Workshop. This publication contained information on some of the less-used capture methods as well as a survey of the literature on methodologies for evaluating translocations and relocation sites. Later, O'Gara and Yoakum (1992) produced the second edition of the Guides that consolidated various management supplements, along with updating and adding new biological and habitat findings.

At the 17th Workshop in California, it was again decided to update the Guides, particularly the sections on habitat evaluations and modifications. Portions of the second edition, along with other new information, were published in the third edition (Lee et al. 1998). This publication, the one previous to this in the series, contained still more information along with a number of revisions and modifications to make the Guidelines more comprehensive and easily understood. This field guide is similar in that it

includes new techniques, removes redundancies, and addresses problems not heretofore considered.

Management guides for any species must be general in nature. Their values are found in the discussions of basic requirements and problems recognized in the management of the species involved. The purpose of the Pronghorn Management Guides is therefore to complement our collective knowledge of pronghorn, while any implementing methodologies compatible with a holistic approach to the ecosystems involved, and not the fragmented, single-species approach previously in vogue (Talbot 1976). And, because information from regional reports and past publications has been used to draw conclusions for management recommendations, care should be exercised in applying techniques successfully used in one area to another having different ecological conditions. It should also be remembered that these Guides reflect actual field management experiences as well as research investigations.

These Guides, when properly implemented, should assist land managers, biologists, and researchers in making decisions. The Guide should not be regarded as a "cookbook" of management practices to be used indiscriminately. Included are basic biological data plus recommended management procedures. Each technique needs to be evaluated for site suitability where the information will be used. When this is done, these Guides will continue to serve its intended purpose as previous guidelines have for more than 25 years

The following variations can be expected when managing pronghorn. 1) Pronghorn bucks may be territorial during breeding season, and 2), Bucks may have harems and/or territories. Given different years, even in the same general location, one cannot assume that buck pronghorn are naturally territorial at all times or for all habitats; this biological characteristic must be determined through field observations on site, and the resulting information corrected for different periods of time. Intensive studies in Oregon by Einarsen (1948), Hansen (1955), Yoakum (1957), and Trainer et al. (1983) showed most parturition occurred between 14 May and 2 June. This period is probably appropriate for other northern populations (Idaho, Wyoming, Colorado, etc.); however, for southern herds, Lehman and Davis (1942) and Buechner (1950) reported fawns born from February through April, and pronghorn in the Sonoran Desert typically give birth in February and early March (Murphey 1917).

Habitat suitability criteria have been established for some, but not all habitats. At times, a system for evaluating habitat suitability may be appropriate to use in different biotic communities, but care must be taken to use the appropriate regional ecological characteristics. An example would

be that a ground cover of 5% grasses, 5% forbs, and 40% shrubs would be characteristic for vegetative composition in the Great Basin shrubsteppe; however, percentages for Plains grassland would more likely be 35% grasses, 30% forbs, and less than 5% shrubs. Pronghorn prefer certain forage species over others, but diets vary locally due to availability as well as preference; therefore, consumption should be determined through local food habit studies conducted on a year to year basis.

These Guides contain references throughout for the many management practices presently used to manage pronghorn and pronghorn habitat. Although attempts were made to summarize or review these practices, the reader is encouraged to consult the original reports for greater details regarding particular study results.

These Pronghorn Management Guides are the work product of dozens of biologists and resource managers. Most management practices are tried, tested, and proven; however, you may note items in need of correction.. Wanting to correct such errors, we strongly encourage suggested revisions be presented at the next Pronghorn Workshop meeting for consideration in the next edition. The Guide will continue to be valuable only if the publication is dynamic, and in keeping with current knowledge and experience gained.

The Compilers

FOREWORD

Pronghorn evolved in western North America during the last 20 million years (Frick 1937). During recent times, this North American endemic ranged from the south-central prairies of Canada through the Plains and Great Basin's grasslands and shrub-steppes of the United States, southwestward ward to the semidesert grasslands and deserts of northwestern Mexico. Although the total area of suitable habitat has now been greatly restricted by human settlement, pronghorn inhabit much of their historic range, possibly as much as 50%. Areas of highest density have always been open grasslands possessing short shrubs where the size of some pronghorn herds reached legendary proportions. Reports from the journals of the Lewis and Clark and Bartlett expeditions indicated pronghorn were most abundant on the Great Plains and in the Central Valley of California (Newberry 1855, Moulton 1983-2003, and Thwaites 1905).

Millions of pioneers, immigrants, and new settlers moved into the western rangelands between 1550 and 1920. Most showed little regard for pronghorn or their habitat. During this period, pronghorn numbers declined due to fencing, habitat loss, competition with livestock, and year-round hunting. By 1920 it was thought that only about 30,000 pronghorn remained (Nelson 1925). But then the future for pronghorn became brighter. Conservation-minded organizations supported state, provincial, and federal programs that curtailed hunting by settlers and market hunters and provided protection through refuges. A prolonged drought, extending from 1918 to 1934 (Pechanec et al. 1937), together with low prices and surpluses of farm products, made cultivated crops uneconomical on semiarid homesteads. Consequently, livestock numbers were greatly reduced, and many marginal agricultural enterprises were abandoned allowing sizable areas of cultivated land to revert to native vegetation. State, provincial, federal, and private organizations now begin regulating the harvests of pronghorn, which were now being reintroduced to unoccupied historic rangelands. Only in a relatively few areas was damage to vegetation by drought and livestock foraging so severe that pronghorn were unable to survive (Nielson 1962).

More favorable weather, regulated hunting, reversion of farmland to rangeland, and translocations resulted in a great increase in pronghorn numbers to more than a million in 1983 (Yoakum 1986). By 2000 legal harvests of more than 3.5 million pronghorn were being realized (O'Gara and Morrison 2004). Recently, pronghorn populations have fluctuated between 600,000 and 800,000 animals, depending primarily upon winter conditions in the northern states and drought in the southern states. Population expansions beyond these levels are currently limited by agricultural, urban, and mining expansions onto historic rangelands; restrictions of movement by fencing; the resistance of agricultural interests to population increases, the alteration of native vegetation by certain rangeland rehabilitation programs, and overuse. And, in certain locales, these and other debilitating factors are such that managers are hard pressed to even maintain existing populations.

Dave E. Brown and Jim Yoakum